

IN THE CLAIMS

1. (Original) An electric power steering system, comprising:
 - a steering wheel in operable communication with a mechanical linkage;
 - a steering shaft in operable communication with the mechanical linkage, and in operable communication with at least one road wheel;
 - a first transmission in operable communication with the steering shaft;
 - a unidirectional electric motor in operable communication with the first transmission;wherein the electric power steering system is configured such that when the steering wheel is turned in a first direction, the motor's power is transmitted in the first direction to the steering shaft, and when the steering wheel is turned in a second direction, the motor's power is transmitted in the second direction to the steering shaft.
2. (Original) The electric power steering system of claim 1, wherein the unidirectional motor is configured to operate using a constant power source.
3. (Original) The electric power steering system of claim 1, further comprising:
 - a second transmission in operable communication with the steering shaft and in operable communication with the motor; andwherein the electric power steering system is further configured such that when the steering wheel is turned in a first direction, the motor transmits a power assist in the first direction to the steering shaft via the first transmission, and when the steering wheel is turned in a second direction, the motor transmits a power assist in the second direction to the steering shaft via the second transmission.

4. (Withdrawn) The electric power steering system of claim 3, wherein the first transmission comprises:

a first flywheel in rotationally operable communication with the steering shaft;

a first clutch in operable communication with the steering shaft and configured to transmit rotative energy from the first flywheel to the steering shaft; and

wherein the second transmission comprises:

a second flywheel in rotationally operable communication with the steering shaft;

a second clutch in operable communication with the steering shaft and configured to transmit rotative energy from the second flywheel to the steering shaft; and

wherein the first flywheel is configured to rotate in an opposite direction from the second flywheel.

5. (Original) The electric power steering system of claim 3, wherein the first transmission comprises:

a first sun gear;

a first planet gear in operable communication with the first sun gear;

a first ring gear in operable communication with the first planet gear;

a steering shaft sleeve in operable communication with the steering shaft;

a first clutch in operable communication with the first ring gear and the steering shaft sleeve and configured to transmit rotative energy from the first ring gear to the steering shaft sleeve; and

wherein the second transmission comprises:

a second sun gear;

a second planet gear in operable communication with the second sun gear;

a second ring gear in operable communication with the second planet gear;

a steering shaft sleeve in operable communication with the steering shaft; and

a second clutch in operable communication with the second ring gear

and the steering shaft sleeve and configured to transmit rotative energy from the second ring gear to the steering shaft sleeve.

6. (Withdrawn) The electric power steering system of claim 1, further comprising:

- a driven disk in operable communication with the steering shaft;
- a first driver disk in operable communication with the motor;
- a second driver disk in operable communication with the motor;
- a driver linkage in operable communication with the mechanical linkage; and

wherein the driver linkage is configured such that when the steering wheel is turned in a first direction, the driver linkage causes the first driver disk to contact the driven disk thereby turning the driven disk in a first direction and providing a power assist in the first direction to the steering shaft, and when the steering wheel is turned in a second direction, the driver linkage causes the second driver disk to contact the driven disk thereby turning the driven disk in a second direction and providing a power assist in the second direction to the steering shaft.

7. (Withdrawn) The electric power steering system of claim 1, further comprising:

- a driven body in operable communication with a driven gear;
- the driven gear in operable communication with the steering shaft;
- a driver body in operable communication with the motor and in operable

communication with the driven body;

a driver linkage in operable communication with the mechanical linkage and the driver body; and

wherein the driver linkage is configured such that when the steering wheel is turned in a first direction, the driver linkage causes the driver body to assume a first contact angle that is not perpendicular to the driven body and causes the driven body to rotate in a direction that rotates the driven gear in a first direction thereby providing a power assist in the first direction to the steering shaft, and when the steering wheel is turned in a second direction, the driver linkage causes the driver body to assume a second contact angle that is not perpendicular to the driven body and causes the driven body to rotate in a direction that rotates the driven gear in a second direction thereby providing a power assist in the second direction to the steering shaft.

8. (Withdrawn) The electric power steering system of claim 7, wherein the driven body is

ovoidal in shape.

9. (Withdrawn) The electric power steering system of claim 7, wherein the driven body is spherical in shape.

10. (Withdrawn) The electric power steering system of claim 7, wherein the driven body is semispherical in shape.

11. (Withdrawn) The electric power steering system of claim 7, wherein the driver body is ovoidal in shape.

12. (Withdrawn) The electric power steering system of claim 7, wherein the driver body is spherical in shape.

13. (Withdrawn) The electric power steering system of claim 7, wherein the driver body is semispherical in shape.

14. (Withdrawn) The electric power steering system of claim 7, wherein the driven body comprises a worm gear that is in operable communication with the driven gear.

15. (Original) The electric power steering system of claim 1, wherein the mechanical linkage comprises:
a torsion bar.

16. (Original) The electric power steering system of claim 1, wherein the mechanical linkage comprises:
a cam.

17. (Original) The electric power steering system of claim 1, wherein the mechanical linkage comprises:
a ball in a helical groove.

18. (Original) The electric power steering system of claim 1, wherein the mechanical

linkage comprises:

a 4-bar linkage.

19. (Original) The electric power steering system of claim 1, wherein the mechanical linkage comprises:

a ball screw.

20. (Original) An electric power steering system, comprising:

a steering wheel in operable communication with at least one road wheel;

a first transmission in operable communication with the at least one road wheel;

a unidirectional electric motor in operable communication with the first transmission;

wherein the electric power steering system is configured such that when the steering wheel is turned in a first direction, the motor's power is transmitted in the first direction to the at least one road wheel, and when the steering wheel is turned in a second direction, the motor's power is transmitted in the second direction to at least one road wheel.

21. (Original) The electric power steering system of claim 20, further comprising: a torsion bar in operable communication with the steering wheel and the at least one road wheel; and wherein the electric power steering system is configured such that when the steering wheel is turned, the transmitted motor's power is proportional to a windup of the torsion bar.

22. (Original) The electric power steering system of claim 20, further comprising:

a second transmission in operable communication with the at least one road wheel and in operable communication with the motor; and

wherein the electric power steering system is further configured such that when the steering wheel is turned in a first direction, the motor transmits a power assist in the first direction to the steering shaft via the first transmission, and when the steering wheel is turned in a second direction, the motor transmits a power assist in the second direction to the steering shaft via the second transmission.

23. (Original) A method for providing power assist for an electric power steering system, the method comprising:

rotating a first body in a first direction with a unidirectional motor;

rotating a second body in a second direction with the unidirectional motor;

providing a power assist from the first body when a steering wheel is turned in a first direction; and

providing a power assist from the second body when a steering wheel is turned in a second direction.

24. (Withdrawn) A method for providing power assist for an electric power steering system, the method comprising:

rotating a first body in a first direction with a unidirectional motor;

rotating a second body in a first direction with a unidirectional motor;

contacting a driven disk with the first body in order to turn the driven disk in a second direction when a steering wheel is turned in a second direction thereby providing a power assist to a steering shaft in the second direction; and

contacting a driven disk with the second body in order to turn the driven disk in a third direction when a steering wheel is turned in a third direction thereby providing a power assist to the steering shaft in the third direction.

25. (Withdrawn) A method for providing power assist for an electric power steering system, the method comprising:

rotating a driver body in a first direction with a unidirectional motor;

changing the contact angle between the driver body and a driven body such that the driver body turns the driven body in a second direction when a steering wheel is turned in a fourth direction thereby providing a power assist to a steering shaft in the fourth direction; and

changing the contact angle between the driver body and a driven body such that the driver body turns the driven body in a third direction when a steering wheel is turned in a fifth direction thereby providing a power assist to a steering shaft in the fifth direction.

26. (New) The electric power steering system of Claim 1 wherein the first transmission includes a first planetary gear in operable communication with the motor and a first clutch in operable communication with the first planetary gear, wherein the first clutch is configured to transmit rotative energy from the first planetary gear to a steering shaft sleeve.

27. (New) The electric power steering system of claim 26 further comprising a second transmission including a second planetary gear in operable communication with the motor

and a second clutch in operable communication with the second planetary gear, wherein the second clutch is configured to transmit rotative energy from the second planetary gear to the steering shaft sleeve.

28. (New) The electric power steering system of claim 27 further comprising a gear system positioned between the motor and the second planetary gear, wherein the gear system changes rotation input in a first direction to an output rotation in an opposite direction from the first direction.

29. (New) The electric power steering system of claim 27 wherein the steering shaft and steering shaft sleeve are axially movable and the first and second planetary gears and the motor are axially stationary.

30. (New) The electric power steering system of claim 3 further comprising a first clutch in communication with the first transmission and a second clutch in communication with the second transmission.

31. (New) The electric power steering system of claim 30 further comprising a steering shaft sleeve in operable communication with the steering shaft and in communication with the first clutch and the second clutch, wherein rotative energy from the first transmission is transmitted to the steering shaft sleeve through the first clutch, and wherein rotative energy from the second transmission is transmitted to the steering shaft sleeve through the second clutch.

32. (New) The electric power steering system of claim 3 further comprising a gear system operably positioned between the motor and the second transmission, wherein the gear system changes rotation input in a first direction to an output rotation in an opposite direction from the first direction.

33. (New) A steering system comprising:

a steering shaft;

a first transmission in operable communication with the steering shaft;

a second transmission in operable communication with the steering shaft;

a motor in operable communication with both the first transmission and the second transmission; and,

a gear system operably positioned between the second transmission and the motor, wherein the gear system changes rotation input in a first direction to an output rotation in an opposite direction from the first direction.

34. (New) The steering system of claim 33 further comprising a first clutch in operable communication with the first transmission and configured to transmit rotative energy from the first transmission to the steering shaft, and a second clutch in operable communication with the second transmission and configured to transmit rotative energy from the second transmission to the steering shaft.

35. (New) The steering system of claim 33 wherein the first transmission includes a first planetary gear and the second transmission includes a second planetary gear.

36. (New) The steering system of claim 35 wherein the first and second planetary gears each include a sun gear, a planet gear, and a ring gear.

37. (New) The steering system of claim 33 wherein, when a steering wheel associated with the steering system is turned in a first direction, the motor transmits a power assist in the first direction to the steering shaft via the first transmission, and when the steering wheel is turned in a second direction, the motor transmits a power assist in the second direction to the steering shaft via the second transmission.